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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,770	08/07/2001	Avner Pierre Badchi	42043	2264
1609	7590	10/08/2003	EXAMINER	
ROYLANCE, ABRAMS, BERDO & GOODMAN, L.L.P. 1300 19TH STREET, N.W. SUITE 600 WASHINGTON,, DC 20036			BEREZNY, NEMA O	
			ART UNIT	PAPER NUMBER
			2813	

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,770

Applicant(s)

BADEHI, AVNER PIERRE

Examiner

Nema O Berezny

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20,22-24,26-29,33,34,36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20,22-24,26-29,33,34,36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/725,166.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7-14-03 has been entered.

Specification

The cancellation of claims 21 and 25 is acknowledged.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 20, 27-29, and 34 recite the limitation "said microstructure" in lines 7 and 8 (claim 20) and line 2 (all other claims). There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the limitation "said providing a semiconductor microstructure" in lines 2 and 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 37 recites the limitation "said semiconductor microstructure" in line 3.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 20 and 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamawaki et al. (4,894,707). Yamawaki discloses a method of producing a crystalline substrate based device comprising: providing a semiconductor including a semiconductor substrate (Fig.4f el.1); providing a spacer (el.3), said spacer defining at least one cavity extending entirely therethrough (Fig.4f); and adhesively sealing (el.9) at least one transparent packaging (el.2) and said spacer onto said semiconductor substrate over said semiconductor and at least partially spaced therefrom, thereby to define at least one gap at said at least one cavity between said semiconductor and said at least one packaging layer, wherein said spacer is formed as a piece separate from said substrate and from said at least one packaging layer (Fig.4f). Yamawaki also discloses a semiconductor comprising a microelectronic structure and an optoelectronic structure (col.1 lines 16-18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 22-23, 26-27 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki as applied to claim 20 above, and further in view of Salatino et al. (5,915,168). Yamawaki does not disclose adhesively sealing said packaging layer with epoxy, providing a silicon substrate, providing a plurality of cavities in said substrate, or providing a micromechanical or surface acoustic wave structure. However, Salatino discloses sealing a cover structure to a substrate using epoxy (col.5 lines 13-19). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the epoxy of Salatino with the method of Yamawaki, wherein epoxy provides a good moisture impermeable seal.

Salatino also discloses a silicon substrate (col.6 lines 5-6). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the silicon substrate of Salatino with the method of Yamawaki, wherein an insulating layer comprising silicon dioxide can be easily formed upon a silicon substrate (Salatino – col.3 lines 30-31).

Salatino also discloses a plurality of cavities (col.5 lines 46-61). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use

the plural cavities of Salatino with the method of Yamawaki in order to mass produce a plurality of packaged devices.

Salatino also discloses providing a micromechanical device and a surface acoustic wave device (col.5 lines 27-32). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the micromechanical device and surface acoustic wave device of Salatino with the method of Yamawaki, wherein a covered package with a gap between the microstructure and the cover is required for a micromechanical and surface acoustic wave structure.

Claims 24, 33, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki as applied to claim 20 above, and further in view of Ichikawa et al. (5,996,199). Yamawaki does not disclose providing a substrate made of lithium niobate, lithium tantalate, or quartz. However, Ichikawa discloses forming a microstructure on a quartz, lithium niobate, and lithium tantalate substrate (col.2 lines 51-54). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the substrates of Ichikawa with the method of forming a crystalline substrate based device of Yamawaki in order to absorb light of a particular frequency used in surface acoustic wave (SAW) devices (Ichikawa – col.15 lines 29-36).

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamawaki as applied to claim 20 above, and further in view of Nguyen et al. (6,245,595). Yamawaki does not disclose providing a wafer and dicing said wafer into

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individual packaged devices subsequent to said adhesively sealing. However, Nguyen discloses mold encapsulating a plurality of individual semiconductor devices on a wafer, then dicing said wafer into individual packaged devices (Fig.6). Therefore, it would have been obvious to a person skilled in the art at the time of the invention to use the wafer encapsulation prior to dicing of Nguyen with the method of Yamawaki in order to save operating costs by performing just one encapsulation procedure for all devices formed on the wafer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nema O Berezny whose telephone number is (703) 305-3445. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on (703) 308-4940. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

NB


CARL WHITEHEAD, JR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800